

# CACTUS AND SUCCULENT JOURNAL

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No. 5



FIG. 85. *Haworthia limifolia* var. *stolonifera*, so named for its root structure. This plant survived the California freeze and snow! Haselton photo.



## CACTUS AND SUCCULENT JOURNAL

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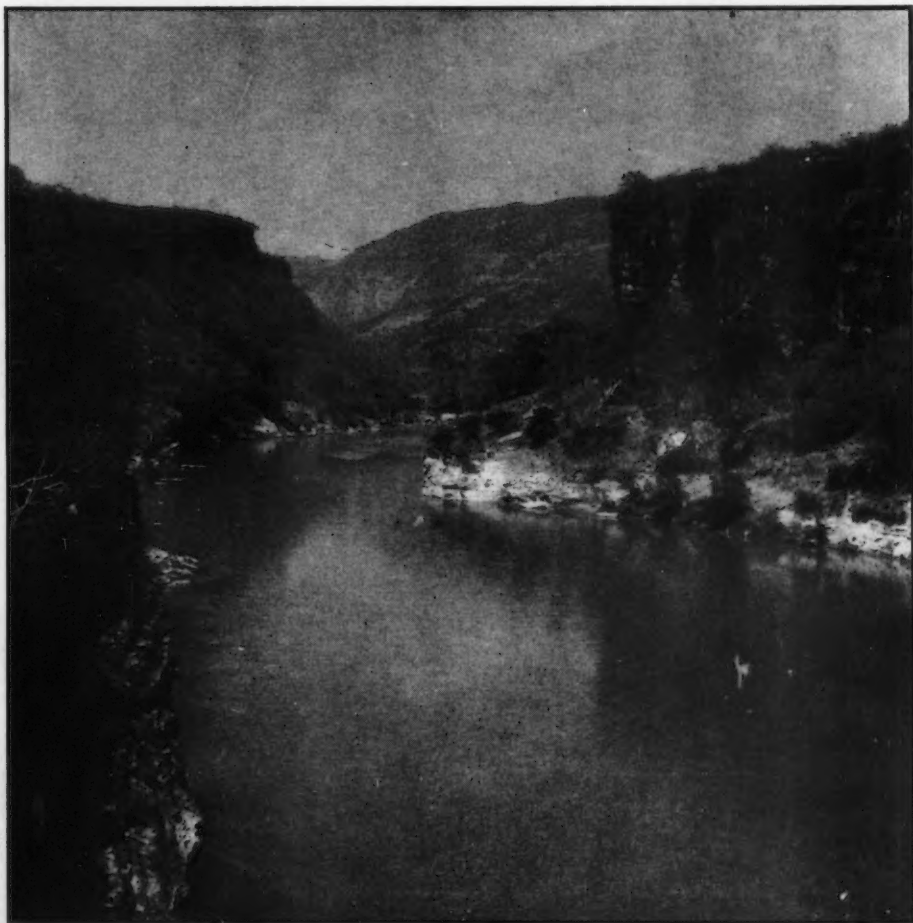


FIG. 86. Looking north from the highway bridge, downstream along the Grijalva River.



FIG. 87. View from near the N. W. corner of the bridge, across the Grijalva River to the limestone cliff habitat of the organ cactus.

## NEODAWSONIA IN CHIAPAS?

By T. MACDOUGALL

Many times I had crossed the bridge over the Grijalva River, along the highway between Tuxtla Gutierrez and Chiapa de Corzo, and, almost as often, had looked curiously from the bus, down along the river and speculated as to what the *Organo* growing on the cañon walls might be.

Then, last March, it was my good fortune to be the guest and guide of two visiting botanists traveling along the Pan-American highway from Tehuantepec, Oax., to S. C. Las Casas, Chis. Nobody was in a hurry, and the journey was

Tehuantepec, Oax., to S. C. Las Casas, Chis. driving and stopping. At the Grijalva bridge we stopped. Along a ledge on the east wall of the cañon we were able to approach some of the *Organos*. I had expected another species new to me but instead, recognized a "*Cephalocereus*"—a "*pitahaya de la piedra*"—of the Isthmus of Tehuantepec where it grows on sites almost equally steep and rocky.

This species is one of a group of "*Cephalocerei*" bearing a terminal cephalium—distinguishing characteristic of the new genus *Neo-*



FIG. 88. Closer view of some organ cacti growing on the cliff shown in Fig. 87. Note that one of the plants has started to brnch. Larger specimens will have 6 or more branches, always from a single trunk.

*dawsonia* of Backeberg. A species recently described by Dawson has this character but is classified as *Cephalocereus apicicephalum*. Flower and fruit characters seemingly were not considered in these classifications.

The generic divisions of the organ cacti will probably always be on an artificial basis. Most of the species, however, are recognizable at a

distance. Those with which I have become familiar I know, preferably, by their native names—in some cases there is no choice. Sometimes, I think I may classify one of the unknowns and honor it with the name of our member, Wilbur Barker of Tehuantepec.

NOTE: This article was written before Dr. Dawson's fine habitat picture of *Cephalocereus apicicephalum* appeared in the last JOURNAL.





FIG. 89 *Azureocereus nobilis* sp. nov. showing the prominent ribs and deflexed spines.  $\times 0.4$

## A New Genus and New Species From Peru

By JOHN AKERS and HARRY JOHNSON

*Azureocereus* gen. nov. Akers and Johnson

Plantae altae, erectae, columnares, supra sparse ramosae, strictae; costis numerosis, prominentibus, humilibus, subtuberculatis; areolis dense lanatis, cum aculeis longis, multis, deflexis pungentibusque; floribus ex areolis superioribus, solitariis, nocturnis; tubo crasso, breve cylindrico, arcuato, cum limbo breve et patente; segmentis perianthii exterioribus fusco-atris, carnosius, squamoides, erosis; segmentis interioribus albis; staminibus numerosis; filamentis brevibus; style

crasso, incluso; lobis stigmatibus multis; squamis ovarii tubique floris multis, grandis, imbricatis, carnosius, laciniatis; fructu ovoideo, sicco; seminibus numerosis, punctatis, nigris.

Plants tall, erect, columnar, sparsely branched above, strict; ribs numerous, prominent, low, somewhat tubercled, especially when young; areoles felted, bearing many irregular, long, subacicular, deflexed, pungent spines; flowers

at upper areoles solitary, nocturnal; tube stout, short cylindric, curved with short spreading limb; outer perianth segments brownish-black, fleshy, scale-like, erose; inner segments white; stamens very numerous, with short filaments, scattered in throat; style stout, included, stigma lobes many; ovary and flower-tube bearing many large, closely imbricated, expanded, fleshy scales, the margins much lacinated, feathery, naked in the axils; fruit ovoid, dry when ripe, covered with the erose scales; floral remains persistent; seeds numerous, finely punctate, shiny, black.

Type locality: Along the Río Montaro south of Mejorada, Peru.

Habitat: The same.

This new and beautiful genus is one of the bluest of the known Cerei, the blue being a skin color and not a bloom as is noted in other cacti. It should be placed with the other scaly-flowered giants in what constitutes one of the most interesting divisions in the whole family of Cactaceae. *Browningia*, *Stetsonia*, and *Escontria* were well described in Britton and Rose's monumental work. Backeberg added the genus *Gymnanthocereus* which, although poorly described, seems to be well founded. *Azureocereus* makes a fifth and even more interesting genus.

	<i>Browningia</i>	<i>Stetsonia</i>	<i>Escontria</i>	<i>Gymnanthocereus</i>	<i>Azureocereus</i>
Fl. Time	noc.	noc.?	diurnal	noc.	noc.
Fl. Size	med.-lg.	large	small	med.-small	med.-small
Fl. Shape	salvar form	salvar form	campanulate	salvar form	cylindric
Fl. Color	white	white	yellow	white	white-brown
Type Scales	cartaceous	cartaceous	cartaceous*	cartaceous	fleshy
Arrangement scales	loosely imb.	not imb.	hardly imbricate	loosely imb.	imbricate
Border scales	smooth	erose ciliate	smooth	smooth	erose
Fl. remains	persistent	not persist?	persistent	persistent	persistent
Fruit scales	large-dist.		triang. dist.	large-dist.	imbricate
Pulp	soon dry		fleshy	fleshy	soon dry

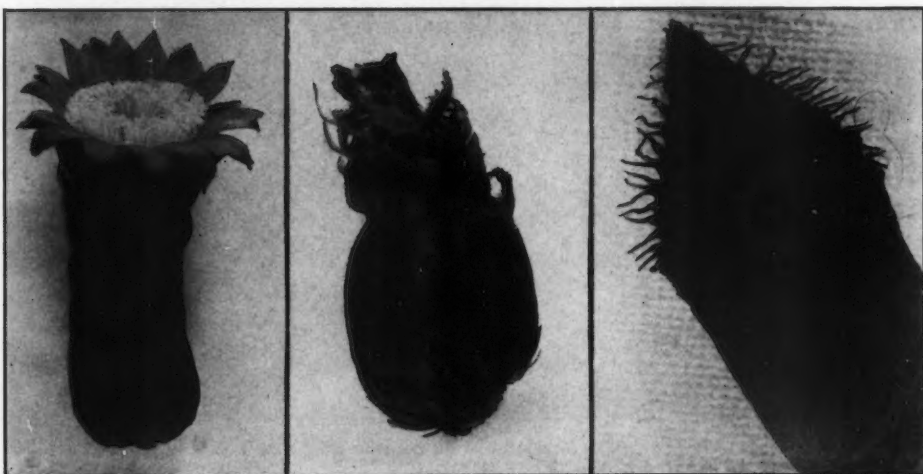


FIG. 90

Flower showing fleshy imbricate scales, stout tube, numerous stamens, and highly erose petals; x 0.55. Ripe fruit x 0.7, showing short, persistent floral remains, and dentate, erose scales. Keeled scale showing dentate teeth; x 5.

*Azureocereus nobilis* sp. nov. Akers

Plantae ca. 5 m. altae; caulibus 12-14 cm. crassis; costis 14-15, prominentibus, convolutis, subtuberculatis; epiderme papillosa, caeruleo-alba; areolis ellipticis, 12 mm. longis, 10 mm. latis; spinis lateralibus in juventute luteis cum apicibus rubris, in aetate griseis, 2-4 cm. longis; spinis centralibus 1-3, deflexis aut recurvatis, griseis cum apicibus porphyreis; setis absentibus; floribus solitariis, subapicalibus, nocturnis, breve cylindricis, limbo 5 cm. lato; segmentis perianthii interioribus 26-30, albis, spathulatis, sum apici-

bus erosis et brunneis; segmentis exterioribus carnosius, brunneopurpureis, laceratis recurvatisque; staminibus numerosis, inclusis; filamentis eburneis, filiformibus, apice constrictis; antheris longis, planis, contortis, ochroleucis, aut sterilibus fuscisque; stylo incluso, albo, crasso; lobis stigmatibus 1 cm. longis, eburneis, 18-20; tubo ca. 5 cm. longo, 2-3 cm. crasso, arcuato, fusco; squamis tubi imbricatis, dentatis, carnosius, carinatis, 7 mm. longis, papillosis; ovario orbiculare; axillis squamarum nudis; fructu ovoideo, 2.5 cm. crasso, subatro; seminibus numerosis, nigris, punctatis.

Plants columnar, branching from above with one or two strict branches; mature plants reaching a height of five or more meters; roots quite massive, woody; stems about 12 to 14 cm. in diameter with from 14 to 15 prominent, channeled, convoluted ribs, the ribs being cut into rounded tubercles by cross sulcations; epidermis papillose and bluish-white in color; areoles located above the center of the tubercle, 3.5 to 4 cm. distant, elliptical (13 mm. long by 10 mm. wide), sunken and filled with short, dark gray, kinky hairs; lateral spines 15 to 20, yellow when young, with red tips, later turning gray, 2 to 4 cm. long, subacicular, sub-pungent; central spines 1 to 3, much deflexed or recurved (often bent as much as 90 degrees), pungent, subulate, gray with red-brown tips; bristles or hairs lacking; flower solitary, nearly apical, nocturnal, short-cylindric with an expanded limb about 5 cm. across; buds nearly black, covered with imbricate, fleshy, erose scales; buds developing for a period of one month or over; inner perianth segments 26 to 30, white, spatulate but with erose tips which are shaded brown; outer segments fleshy, brownish purple, lacerated and recurved; stamens very numerous, included,

filling the throat; filaments ivory-white, filiform and constricted at the tips; anthers long, flat, contorted and buff colored, some being sterile and dark brown; flower self sterile; style included, white, heavy; stigma lobes 1 cm. long or more, ivory colored, velvety and from 18 to 20 in number; tube about 5 cm. long (including the ovary), 2 to 3 cm. thick; curved upwards, dark purple-brown; tube scales imbricated, dentate, fleshy, keeled, 7 mm. wide, dull, papillose; each tooth of the scales again dentate making a feathery edge; ovary ovoid, slightly larger than the tube in diameter and covered with the same type of scales; the axils of the scales on the tube and ovary are naked; ovules dull, white, ovoid, numerous, and in parallel rows; placenta long and ciliate; fruit ovoid, 2.5 cm. in diameter, covered with imbricated, erose scales, nearly black; floral remains short, persistent, dark brown and scaly; fruit dry when ripe with great quantities of medium small, shiny, black punctate seeds; hilum small, dark brown.

Type locality: Along the Río Montaro south of Mejorada, Peru.

Habitat: The same.

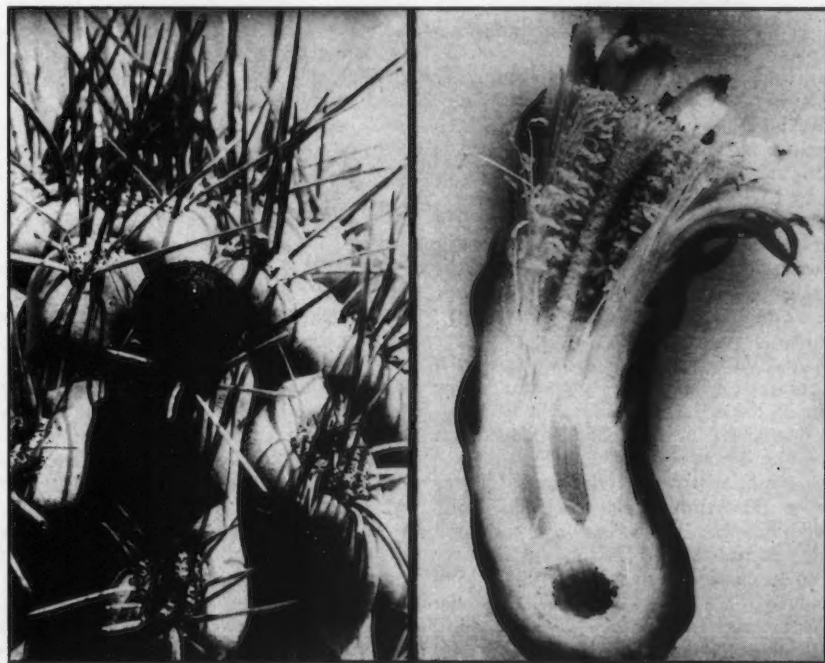


FIG. 91

*Azurocereus nobilis* sp. nov., x 0.75, showing convoluted ribs, prominent tubercles, sunken areoles, and deflexed central spines; black flower bud is shown near top of plant. Cross section of flower shows heavy curved tube, many stamens, stout style, eshy scales and erose petals x 1.

This noble blue *Cereus* is a striking plant. The seedlings do not have the blue coloration at first, but develop it rather slowly. The scales of the tube and ovary are outstanding in the family Cactaceae and resemble the toothed leaves of some of the Haworthias in the setata group. There is a giant blue *Trichocereus* in the south of Peru along the Río Apurimac which might at first glance be taken for an *Azureocereus*. However, the much deflexed spines of the latter will serve to separate them easily when not in flower. The *Trichocereus*, as might be expected, has large salver-form flowers with

brown, densely hairy tube and ovary. The genus *Azureocereus* comes from a subtropical zone which is frost free, so the plants would probably not stand too much cold. So far as is known at present, this species is a monotype. Of the five related *Cerei* three are found in Peru; *Browningia* in the south, *Azureocereus* in the center, and *Gymnanthocereus* in the north. One is found in Argentina (*Stetsonia*), and the last one is found in central Mexico (*Escontria*). I have seen the distinct fruit of *Escontria*, *Browningia*, and *Azureocereus*, but I would like further information on the other two.

## CACTI IN MICHIGAN

By RICHARD KOLASINSKI

About five years ago, my wife and I walked out of a dime store with our first two "cactus" plants. Subsequent trips added more plants to our first two until we had 8 or 10. At this time a desire to identify our plants took us to a library where we found a copy of Marshall and Bock's "Cactaceae." One of our first two plants turned out to be *Astrophytum ornatum*, the other was a *Sempervivum*. Most of the subsequent plants were succulents.

In the following two years our collection grew until all the windows in our small house were full. At this time we decided to build a 12x13 greenhouse. Now this is full with between three and four hundred cacti and succulents, all of which are healthy and growing with losses usually below 1% a year and a high proportion of mature plants blossoming. In getting to this point we have successfully broken many of the usual rules of cactus culture and with the hope that our experiences may be of help to others, this article is written.

When we first started our collection we decided our cacti would have to grow the way they do in the wild, without too much individual care and pampering. Soil mixtures are kept simple: Two parts black garden soil, one of river sand and two of well-rotted straw or cornstalks. These ingredients are individually screened through a 1/4" screen then measured out and a cupful of 2-12-6 or 2-16-8 fertilizer added to 30 quarts of soil mixture. Everything is then mixed in a cement mixer. None of the usual extras such as old plaster, bone meal, charcoal, or eggshells are used. This soil mixture is kept as dry as possible, so that when potting a plant, it sifts between the roots. This

makes it much more convenient than trying to pack moist soil around the roots of a spiny cactus. After the soil has been put in, we tap the pot on the bench a few times and then water it. This method is followed with all newly acquired cacti including collected desert cacti. We believe that using a dry soil mixture and judicious watering immediately is the best way of starting collected plants and our belief is borne out by the fact that out of about a hundred desert plants all but one or two have grown successfully.

There are several features to consider in regard to the size and type of container to use. The good growing season is much shorter than in the southwest, so in order to make the most of it, small plants 3" pot size or smaller are best handled in one of three ways, as follows:

1. Plant in flats. These are boxes three or four inches high, length and width depending on available space. This is the fastest way of getting your small plants to grow.

2. In individual pots which are then set in a flat containing vermiculite or a mixture of equal parts of sand and leaf mold. Sand alone dries out too fast. One advantage of this method is that the moisture of individual plants can be controlled by regulating the depth at which the small pots are placed in the vermiculite.

3. By growing plants in tin cans. Use short tin cans, paint inside with asphalt roofing compounds and punch three or four holes on the sides of the can at the bottom.

All three methods result in a more uniform moisture condition enabling plants to make good growth. We have even kept plants for several years in painted clay pots without a



FIG. 92. Two-year graft of *Wilcoxia Schmollii* had 50 buds.

drainage hole. An example of this is a *Mammillaria bocasana* that was kept for three years in such a 4" pot. It grew from a single head to a cluster of 13 heads, blossomed each year, last summer producing over 300 flowers with sixty open in one day.

Once plants have outgrown a three or four inch pot, many of them are placed in pots which are not full height. These are the  $\frac{3}{4}$  height pots often called azalea or fern pots by florists and the shallow kind called bulb pots. The decision to use full,  $\frac{3}{4}$  or  $\frac{1}{2}$  height pots is based on many factors: Physical, artistic, physiological. Heavy stem forming Aloes such as *A. Marlothii* and *A. distans* and heavy Opuntias need

a pot that is wide to keep them from tipping. Also if an *Aloe Marlothii* with a 14" leaf spread is placed in a pot at least 10" in diameter, there is less danger that it will be crowded too much than there would be if it were in a 6" pot. But a full 10" pot would be entirely too heavy to handle so a 10" azalea pot is used. Stem forming Aloes should grow with only the roots in the ground and not the stem. This is accomplished by leaving the plant setting a little higher each time it is repotted. Watering at the base of the stem washes away some of the dirt leaving the stem out of the ground. In the case of the small clustering Aloes such as *A. humilis*, *A. virens*, the Haworthias and the Echeverias,



artistic reasons seem to indicate a  $\frac{3}{4}$  height pot. There is a better balance between the size and shape of the pot and the size and shape of the plant.

Finally many low growing, mat forming Sedums, Crassulas, etc., do well in shallow bulb pots. Not only do they have a shallow root system making deep pots unnecessary but there is often a tendency for the old stems to lie down, root and start new plants. We often use seven or eight inch bulb pots for plants such as *S. guatemalense*, *S. pachyphyllum*, and *Crassula trachysantha*. Few succulents are kept in full height pots larger than 4 or 5 inch, the exception being hanging plants such as *Sedum morganianum* and *Crassula perforata*, and then only when pots are standing on a bench or shelf. If these are kept hanging, then shallower pots can be used.

With cacti especially the taller ones such as the Cerei, we do use full five or sixes. If larger pots are required,  $\frac{3}{4}$  height seem best.

Each summer owners of greenhouses must decide which plants to set out in beds. Growth is usually faster, this is particularly true if the plants are taken out of the pots. Plants with robust root systems such as Opuntias, Aloes, and Agaves will root through the drain hole and the resulting growth is often surprising. The possibility of hail damage keeps us from taking out the more valuable plants, so we usually move out the large Opuntias, Agaves, less valuable Aloes and offsets of some of the better plants left in the greenhouse. Often these offsets grow so much faster and better in a bed that by fall we discard the parent plant and keep the offset.

This good growth can only be realized in a well situated fertile bed. It should be raised and well drained of course, but not to the extent that all water runs off as fast as it is applied. Pots should be buried in the soil and not just placed between some rocks. In a dry year the beds can be well watered every three or four days. While most books recommend watering in the morning, our own practice has been to water at 7:30 or 8:00 in the evening without any ill effects.

In moving plants from a greenhouse to a bed, there is usually no trouble due to sunburn. When moved out of a house, plants should be shaded for a week or more. This is particularly true of the new growth.

In the fall we are faced with the question of when to bring the plants in. In the case of most succulents except the large Agaves, it seems best to bring them in well before the first frosts.

Cacti, particularly the hardier ones, are best left outside as long as possible in order to assure that they are quite dormant when brought in. They may be covered with bags, papers, etc., on occasional frosty nights. Once well dormant, Agaves, Opuntias, and no doubt many of the other larger cacti can be stored in a basement. Light is not particularly necessary so long as the basement is quite cold—not over 45 or 50 degrees. Such plants when in large pots can often go through the winter without any water at all or with only a little once a month.

We make it a practice not to heat the greenhouse until it is absolutely necessary. In addition to a saving of fuel there are two other advantages. First, it helps cacti become dormant and second it eliminates much watering. With greenhouse temperature at 40 while outside the temperature is 25, humidity is usually high enough so that water once in two weeks is all the plants need during the late fall. Once the weather gets really cold outside and artificial heat is used inside, the humidity falls so rapidly that we often increase our watering to twice a week. We have found that insufficient water during this period of low humidity often causes the roots to dry back. This results in a slow start in the spring and sometimes results in rot when too much water has been applied to a plant with dried up roots.

Growing new roots on a plant or cutting is often a problem. While cuttings will root occasionally while lying on a bench, this is quite rare in our experience. Sometimes they will set in a pot for a year or more without rooting. In cases like this we have found that keeping the well-dried cutting in a tray of moist vermiculite with bottom heat is often the solution.

One of the principal problems of maintaining a collection is insect control. There are many ways of tackling this problem, some of them more or less time-consuming. With a small collection and limited time, the problem is different. It is usually hard to move big plants from the back of a shelf for frequent inspection, etc. Our own practice is as follows: Fumigate greenhouse two or three times a year with Nico-fume. This kills plant lice that occasionally become a bother. Nico-fume does not hurt the mealy bug, so we have devised a little gadget for them. It consists of a nozzle with a single hole  $\frac{1}{16}$  of an inch in diameter. This is attached to a hose and water system. The result is a very small but powerful stream of water that reaches into all the crevices of plants and removes all mealy bugs, their eggs, spiders, their webs, etc. It does in minutes a job that would

otherwise take hours.

One of the aids in the control of mealy bugs is the prompt removal of dead leaves from plants such as the Echeverias and the Dudleyas. This is particularly true of Dudleyas that retain their old dried-up leaves indefinitely, making a perfect breeding place for mealy bugs. These old Dudleya leaves are often difficult to pull off so we use a small sharp knife to cut them off near the stem. In the case of Echeverias we do not prune them anymore than is necessary. An Echeveria with a stem and rosette well off the ground is less apt to harbor mealybugs than one kept close to the ground. This is also true of Aeoniums, Graptopetalums, etc.

Last summer was the first summer our greenhouse was in operation and lime spray was applied to the glass about June 1. By the first of July rains had washed this off and no more shading was applied. A large hybrid Epiphyllum stayed in full sun all summer without too much harmful effects. Shading individual plants is a bother and too much shading over the whole greenhouse is not conducive to blossoming of desert plants.

Plants that have not been repotted within a year get a teaspoon of 2-12-6 or 2-16-8 fertilizer for a 4" pot about once a year. This is put on top of the soil around the plant and is not worked in but allowed to soak in as the plant is watered. These are fertilizers with a comparatively low nitrogen content and it is our belief that they are more suitable than the garden fertilizers higher in nitrogen. Up to the present we have not used manure in any form although living on a farm where it is readily available.

Success of any particular cultural methods is often judged by the number of plants a collector gets to blossom. In a year and a half of greenhouse operation and over half the plants in our possession less than three years, the following plants have either blossomed or are in bud.

#### SUCCULENTS

Aloes: *humilis*, *grandidentata*, *ciliaris*, *vera*, *variegata*, *humilis* var. *echinata*, *Davyana*.

Echeverias: out of 24 species all except *microcalyx* and *multicaulis*.

All Dudleyas, half the Haworthias and Gasterias, many Crassulas including *C. argentea*, *C. perforata*, *C. cultrata*, and other plants such as *Adromischus cristatus*, *Cotyledon macrantha*, *Pachyphytum oviforme* and *Cornelius* hybrids, *Kleinia*, *Delosperma*, *Faucaria*, *Trichodiadema*, *Stapelia*, *Huernia*, *Echidnopsis*, *Bryophyllum*, *Kalanchoe*, *Graptopetalum*, *Euphorbia*, and *Anacampteros*.

#### CACTI

Six of fifteen blooming size Mammillarias, many of these we have had only one year, three out of four *Echinocereus*; *Stenocacti flexispinus*, *acroacanthus*, *lamellosus*; *Wilcoxia Schmollii*, *Lophophora Williamsii*, *Ariocarpus fissuratus*, *Cleistocactus Baumannii*, *Pelecyphora asselliformis*, *Thelocactus bicolor*, *uncinatus*, *Hamatocactus setispinus* (2 plants), *Heliocereus speciosus*, *Echinopsis Eyriesii*, and *multiplex*, 2 *Opuntias*, *Notocactus ottonis* hyb., *Rebutia miniscula*, *Lobivia Pentlandii*, *Eriocereus Martinii*, *Chamaecereus Silvestrii*, *Schlumbergera Russeliana*, *Epiphyllum*, *Aporocactus flagelliformis*.

For healthy, quick growing plants with nice flowers, we will take *Heliocereus speciosus* and *Eriocereus Martinii*. Both of these bloomed within a year of rooting an eight inch mature cutting. *Chamaecereus Silvestrii* is now in a sawed off nail keg 12" across, a single stem five years ago, it now has hundreds, has bloomed two years consecutively; keep moist in the spring.

*Editor's Note:* For pictures of the plants mentioned refer to "Glossary of Succulent Plant Terms" and the two Amateur books.

#### AN INVITATION

The Los Angeles Cactus and Succulent Society wishes at this time to issue an invitation to any members of the Cactus and Succulent Society of America, Inc., to attend any or all of the meetings of the Los Angeles Cactus and Succulent Society. If you would like to be notified of the time and place of these meetings, contact either, Mrs. Mary Glade, Secretary, Los Angeles Cactus and Succulent Society, 7600 Verdugo Crestline Dr., Tujunga, Calif., Florida 3-3516, or Mrs. Ethel Rush, Secretary, Cactus and Succulent Society of America, Inc., 820 W. 115th St., Los Angeles 44, Calif., Plymouth 4-6957.

The Los Angeles Cactus and Succulent Society is a study group and at every meeting plants are shown and discussed and a definite schedule of study is followed. This study course is designed to fill the needs of the amateur as well as the more advanced student. All persons interested in cactus or the other succulents are invited and are always welcome.

Los Angeles Cactus and Succulent Society

Local Affiliate of the Cactus and Succulent Society of America, Incorporated

#### RESEARCH BOARD

The Research Board is still willing and anxious to help any member of the Society with their problems of identification and nomenclature, just address your request for information, or send the material which you wish identified to the Research Board, 820 W. 115th St., Los Angeles 44, Calif., and the Board will notify you as soon as identification is made. In the case of plants sent in for identification be sure to send sufficient postage for the return of the plant to you.

When sending in plant material for identification always send along all information about where the plant was collected and whenever possible a photograph of the territory in which it grew.



FIG. 93

LEFT: *Euphorbia fasciculata* showing remains of fertile peduncles and one young inflorescence. RIGHT: *E. Schoenlandii* showing fertile peduncle and two old sterile peduncles from the same tubercles, and young sterile peduncle with true leaves above. Natural size.

### EUPHORBIA FASCICULATA REDISCOVERED

In July, 1948, I was privileged to accompany Professor Compton and Mr. G. W. Reynolds on a collecting trip for succulents to Little Namaqualand, and this was one of the many rare species I hoped to meet with in the wild state. Being acquainted with our plans, Mr. Herre, well known for his own trips for succulents, informed me that "*Euph. fasciculata* had to be

found again." It was on our last day, when we were near Van Rhynsdorp, that it was decided to leave the main road to explore an area called the Kners Vlakte, a vast, undulating expanse seemingly bare of plant or animal life but known to be the home of a vast number of rare species of succulents. Moving slowly with our precious cargo over the rutted track I suddenly

observed a *Euphorbia* a few feet from us. It was surely *E. fasciculata*! Some six inches tall, leaning outwards from the base of a shrublet which was perched on the brink of a small donga that meandered drearily across the plain. Further search down this yielded three other specimens about the same size. It was evident that all had begun their lives in the shade and protection of a small bush and all were leaning in the same direction, i.e. to the north, nor were they easy to see for their dull coloring and the harsh glitter of the surrounding quartz pebbles in the strong sunlight played tricks with one's eyes. But though this plant is reputed to exhibit a curvature of the apex to the north none of the specimens showed this. Like the tower of Pisa they only leaned from the base.

I had hoped to find another species, viz. *E. Schoenlandii*, that day but time did not permit of this. However, I did ascertain the locality for it and two months later I found myself in the Van Rhynsdorp district once more. On an area of sandy veld I saw them in vast numbers and at last I was able to have the two species together for comparison. As previously pointed out by the authors of "Euphorbiae," the two species were for long confused and descriptions somewhat mixed up.

*Euph. Schoenlandii* is a much more robust plant, many being seen to be a yard in height and with trunks, normally unbranched, up to six inches thick. Its "spines" are stout and hard pointed, sometimes curving upwards or criss-crossing but on the whole, fairly symmetrical, and all emerging from conspicuous grooved tubercles. With *E. fasciculata*, on the other hand, the "spines," a poor term in this case, are more slender, longer, are contorted and twisted so that the entire plant appears to be covered with interwoven stalks. Many of these have obviously been quite unable to grow directly outwards, have been arrested by other stalks and have curved in and through them in their efforts to get the tips to the open.

Both species flowered some months after gathering and I have attempted to illustrate by simple outline the chief differences between their manner of flowering and the function of the "spines." The flowers of *E. Schoenlandii* are on short, thick peduncles and always form below the stout, sterile peduncles which they really are, rather than true spines. Even on very old plants I saw flowers and fruits quite near the ground, proving that tubercles many years old are capable of fruiting year after year. The apex, region of new tubercles and young, sterile peduncles, does not produce flowers. The young sterile peduncles are green, bear several long, narrow leaves of short duration, and

sometimes such leaves form in the grooves of older tubercles as well. Though blunt when young, these sterile peduncles gradually harden to very sharp points and become greyish and hollow.

With *E. fasciculata*, on the other hand, the fertile peduncles form quite near the apex and it would appear that only two or three such inflorescences are produced each season. They are three to five inches in length and carry up to ten flowers on very slender pedicels. After fruiting the latter drop away but the remaining peduncles do not harden to points as do those of the other species. The tubercles of both species are rather similar, characteristically grooved, give rise to peduncles in each case. As many as three stout ones will be seen in *E. Schoenlandii* and up to four in those of *E. fasciculata*, always one behind the other, and not in a bunch, as it were. The youngest is always nearest the apex of the tubercle.

It is hoped that these notes might help some of those, lucky enough to have one or both species in their collections, to distinguish the chief differences, and I would add that they both come from a region with scant rainfall, enduring many months of rainless weather during the hottest portion of the year.

H. HALL,  
National Botanic Gardens,  
Kirstenbosch, South Africa.

#### NOMINATIONS

At the annual meeting of the Cactus and Succulent Society of America, Inc., the Nominating Committee submitted the following: For President, Dr. Robert T. Craig. Vice-President, Homer G. Rush. Secretary, Ethel G. Rush. Treasurer, George G. Glade. Members of the Executive Board: George Lindsay, John Akers, Mrs. Phyllis Dow.

The following additional nomination for members of the Executive Board were made from the floor during the meeting: Anthony Baroni, Gilbert Tegelsberg, Mrs. Cactus Pete.

#### BY-LAWS AMENDED

At their recent meeting the Board of Directors of the Cactus and Succulent Society of America, Inc., by unanimous action voted to amend the By-Laws of the Society as follows:

Amend Article I. Memberships. Section 1. There shall be five classes of memberships; active, associate, sustaining fellowship, and life.

Amend Article I. By deleting in their entirety sections 4-4A and 4B and by changing the numbering of the remaining sections to correspond.

Amend Article VIII. Election. Section 1. It shall be the duty of the Recording Secretary to prepare, have printed and mail to each active member, not later than October fifteenth, one copy of the Official Ballot provided by the Society.

Article VII—Section No. 1. The nominating Committee shall return one or more nominations for each elective office.

ETHEL RUSH, Secretary.



## MATHEMATICS IN NATURE

By MYRON KIMNACH

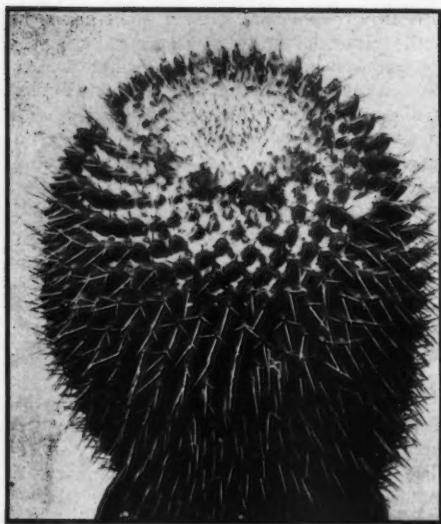


FIG. 94

Mammillaria showing the tubercles in spirals. A fine example is *M. Craigii*, see JOURNAL Vol. 14, pg. 107; also "Mammillaria Handbook."

It is surprising to learn that cacti and arithmetic have something in common, but such a case is mentioned in the "Blühende Kakteen" description dealing with *Thelocactus tulensis* (Plate 18). A little research in a book\* on mathematics reveals the following additional facts:

There is a well-known numerical series with the following units: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, and so on to infinity.

This, called the Fibonacci series, is constructed by adding the first two numbers to obtain the next in the series; thus, 2 plus 3 equals 5, 3 plus 5 equals 8, etc.

Strangely enough, this progression is followed by a wide variety of plants in their manner of growth; in fact it is present in any plant that forms spirals with some part of itself, such as petals, leaves or seeds. Of special interest to us is that it is very noticeable in certain cacti.

\*This subject is briefly dealt with in "Riddles in Mathematics" by Northrop: Van Nostrand, 1944; a more complete treatment is found in Jay Hambridge's "Practical Application of Dynamic Symmetry;" Yale Press, 1932.

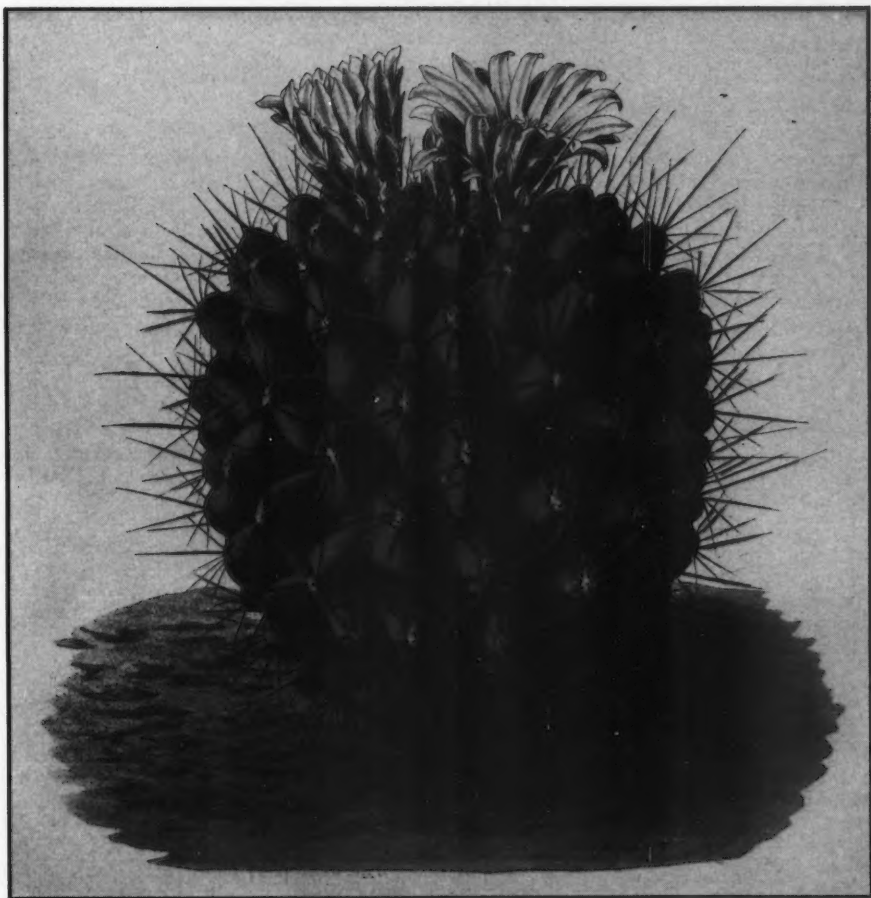
Let us take any cactus with spiraled ribs that are prominently tubercled: Looking down on the crown, first count the number of clockwise spirals that radiate from the growing point, then the number of counter-clockwise spirals; it will be found that the resulting numbers will be successive units of the Fibonacci series! If one is 13, the other must be either 8 or 21 and cannot be any other of the units nor any number in between, say 10 or 18.

Another excellent example of this relationship appears in the sunflower. If you count the spiral rows of seed in these flowers you will see that the average head contains 34 spirals in one direction and 55 in the other, while in the largest the ratio is 89/144. The same ratio is found in such diverse objects as pine cones, the leaves in a head of lettuce, the layers of an onion, and in composite flowers such as the daisy and aster. Also most rosette succulents, such as Echeverias, show this arrangement.

As if this were not remarkable enough, let us now examine the placing of leaves on a stem of any plant, so long as the leaves are alternate and arranged spirally. (For this experiment it is best to choose a plant whose leaves are well separated from one another, such as a garden shrub—for while this phenomenon is present in succulents it is less easily observed due to the more compact growth.) Numbering any leaf 0, count the others as they revolve upwards about the stem until you arrive at the first leaf directly above the leaf numbered 0; the resulting number is usually some term of the Fibonacci series! So also is the number of turns the leaves make around the stem in their climb upward toward this last leaf.

It is easy to wax mystical when pondering over this constant tendency among plants, especially as we are accustomed to think of their growth as being more or less haphazard and we are rather disturbed to find evidence of a pattern. But as mysticism is scorned by science perhaps we had better expend our energy in experiments with our own plants; a tour of the garden or greenhouse with pencil and notebook to test the above "law," and the recording of exceptions to the ratio which do sometimes occur—all this at the very least would add to our own interest and appreciation of Nature and might possibly contribute important data to science.





*Echinocactus Tulensis* Pos.

*Plate 18*

From *Blühende Kakteen*—November 29, 1901.

**Echinocactus Cumingii Hopff.**

## PLATE 19

*Echinocactus Cumingii* Hopffer in Allgem. Gartenzeit. XI, 225; K. Schumann, Gesamtbeschr., 411.

Because of the willingness with which it produces its beautiful flowers in the greatest profusion, this plant is one of the finest of cacti. Although the accompanying plate must be considered very pretty, I have seen a far more striking specimen in the collection of the Secretary of the German Cactus Society, Herr Hirscht, Chief City Clerk; three times as many of the very beautiful orange-colored flowers were put forth at once, encircling the crown like a heavy wreath. This embellishment appears on the plant twice yearly. As in the species last discussed the plant body is covered with tubercles but here they remain much shorter and are distinguished by being colored a cheerful green. The contrast in color between plant and flowers is very attractive.

With this species too the exact habitat is unknown; we were told only that it was sent from Bolivia. While the plant is distinct, mainly through the color of the flowers, from the familiar types of South American species, there are no known similar forms from Mexico either—the species is an "individualist." However, the name *Echinocactus Cumingii* makes it a certainty that it originated from the region of the Andes Mountains, for here Cuming, a tireless collector, gathered many living and dried plants, as well as seed. Cuming's main work, of course, was not accomplished in South America, but in the Philippine Islands in East Asia. Europe's first knowledge of the floras of these regions was founded on Cuming's plants. His excellently prepared dried specimens were outstanding in herbariums. On one of his journeys he also reached Chile where he collected at many localities in that then little-known land. I presume that Cuming collected the species in this district, for I have never heard that he carried through a thorough exploration of Bolivia; to my knowledge he did not venture north of Coquimbo.

This species has certainly not been imported from its homeland in recent times. As with so many of the South American species (I will mention only *Echinocactus nigrispinus* and its relatives *E. pumilis*, etc.), it is very easily raised from seed; all specimens of these plants (including the above mentioned species) known to me in the collection of Herr Hirscht were reared by us. They grow into beautiful specimens in a comparatively short time.

A second *Echinocactus* of the same name was described by Regel and Klein in 1860; but it was lost, and so we have no accurate knowledge of it. From the description, however, it follows that it must definitely be considered distinct from *E. Cumingii* Hopff.

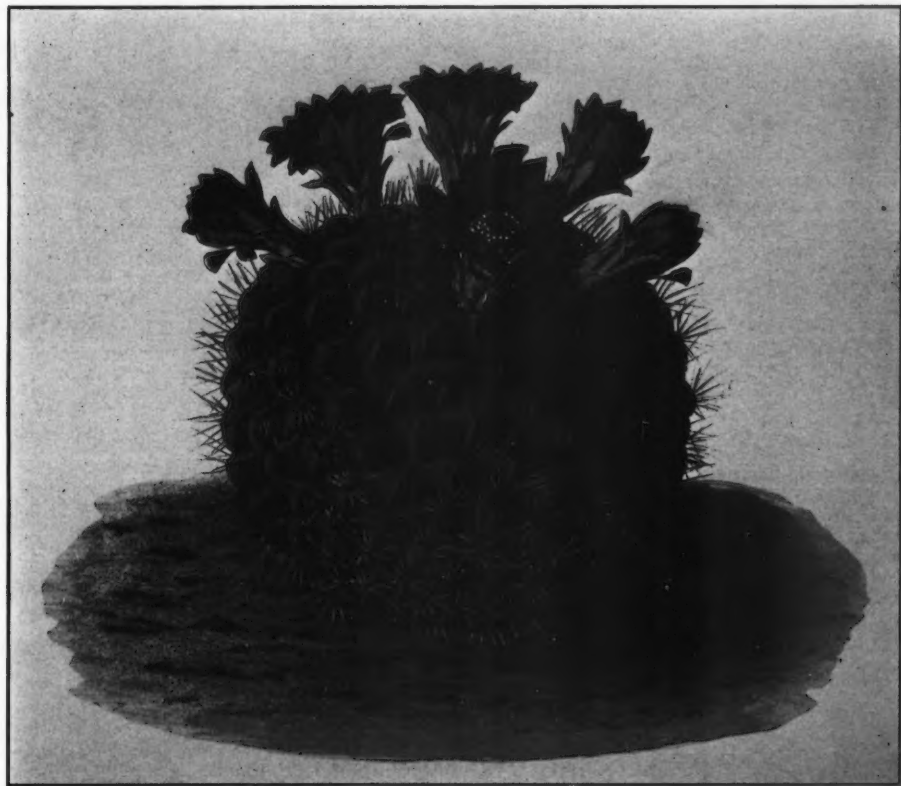
Translation by Myron Kimnach

## CLASSIFICATION—1949

Notes by W. TAYLOR MARSHALL

*Weingartia Cumingii* (Hopff.) Werd.

This perambulating species has been referred successively to the genera *Echinocactus*, *Lobivia*, *Bridgesia*, *Spegazzinia* and finally to *Weingartia* where we sincerely hope it will remain.



*Echinocactus Cumingii* Hopff.

PLATE 19

From Blühende Kakteen—November 29, 1901.

*Mamillaria pyrrhocephala* Scheidw.

## PLATE 20

*Mamillaria pyrrhocephala* Scheidweiler, Allg. Gartenzeit. IX, 42; K. Schumann, Gesamtbeschr., 598.

The plant pictured here is undoubtedly the same as those at present cultivated in collections under the above name. But it must be stated with certainty that it does not exactly match the type of the species as described by Scheidweiler. While the appearance of the plant itself is identical with this type, the color of the flowers does not coincide. The latter were reported by Scheidweiler as being red; also the name of the species means "red-headed." I have closely examined this plant many times and have finally come to the conclusion that we have here a yellow-flowering variety of the type. The form of the tubercles is the same—they are angular as is plainly shown in the illustration. Yet the number of species in the section *Polyedrae* is so few that it could easily be considered as distinct. If we agree not to make this very handsome form a new species, then we will have to let it remain with *M. pyrrhocephala* Scheidw. and perhaps at the most give it a varietal name.

The whole section differs from the majority of *Mamillarias* in so far as they belong to the southern part of Mexico. All the species come from the state of Oaxaca although one or two species range yet further north. They show a quite distinct peculiarity in the development of bristles from the axils. I recognize this as the beginning of spine formation at this spot. Because of this the axils seem to resemble areoles. The latter are usually capable of emitting three different types of growth: wool, spines and flowers. This is the situation in all the genera with the exception of *Mamillaria*. In this group the flowers are formed in the axils next to the tubercles. Most species of *Mamillaria* develop only flowers in this area. A considerable number also bring forth wool there, and in our species it is produced in great abundance. Finally in the section *Polyedrae*, and most noticeably in *M. polyedra* Mart., there develop strong bristles so that now there is the greatest similarity between this region and the areoles. Because of this I regard the section *Polyedrae* as being the most highly evolved group in the entire genus, and for this reason I have placed it at the extreme end of the genus.

Translation by Myron Kimnach

## CLASSIFICATION—1949

Notes by W. TAYLOR MARSHALL

*Mammillaria pyrrhocephala* Scheidweiler.



FIG. 95. *Echinocereus rigidissimus* is the well-known Arizona Rainbow Cactus—so-called for its varicolored spines arranged in bands. A spectacular plant in flower but does not last long in collections.

### ARIZONA CACTI

No. 5 of a series by R. C. PROCTOR, Phoenix, Arizona.



## KEEPING UP WITH THE SPINES

G. L. Berry  
and  
Other Cactophiles

Mr. A. C. Stadleman from Montreal, Canada, wants to hear how other cactophiles in the north grow their cacti and make them bloom. He writes: "I would like to hear from people of the cold climate (where temperatures go below zero). What their experiences have been and how they have succeeded in making cacti grow and bloom without the benefit of a greenhouse. We of the cold north are in that part of the world where cacti do not like to be—they shiver half the time and are not happy. They do not want to grow unless they are provided artificially with the proper climate."

A. C. STADLEMAN.

From Vancouver Island, B.C., Canada, comes the following along the line of growing and blooming cacti in the north: "All my plants are out in the garden from April till the end of September. Small ones are put in a cold frame when first brought out of the basement, where they all go for the winter. In the basement we have shelves for them that are faced by the south windows. They all seem to come through the cold months O.K. And now (July 2nd) many are in bloom. Those blooming now are *Heliocereus speciosus* with fifty blooms on one plant and thirty on the other. *Epiphyllum Ackermannii* has twenty-five buds and blossoms. *Echinopsis multiplex* has four blooms and two Parodias have two blossoms each. And a lot of others are in bloom or budded. I have been collecting for around fifteen years and have about 150 plants. All are interesting whether in bloom or not."

AUSTIN D. COOPER.

*Mr. Cooper must have the secret. Many of us here in the States would like to have ours bloom as well as his do way up in the north. Wonder if it is the long rest during the cold months? What is your opinion, Mr. Cooper?*

From Mr. A. J. Merrick of Leicester, England, comes a letter and a question: "Many of the firms in your Journal advertise cactus seed. As we here in England cannot send dollars for such things, can you tell me of some method whereby I could obtain some seed?"

*Wonder why we couldn't trade seeds? I, for one, and there are many others, that would like to have seeds of the South African Succulents, especially Lithops and similar kinds. Suppose*

*we contact our English friends and find out what cactus seeds they want and then send the seeds to them while they in return send us seeds from S. Africa, which I understand they can obtain. Write Mr. Merrick or me and I will contact him or others for a trade.*

*There are methods of preserving flowers so that they keep their normal appearance, color, shape, etc. Has anyone been successful with flowers of the cacti and other succulents? Those of the "orchid cacti" should be beautiful. Let's hear about it, if it can be done.* G. L. B.

Outside cacti in a wet country—Mrs. H. L. Huch from Chester, Ill., handles the problem very well. "I have a pyramid bed made outside for all my hardy cacti and I use a very loose rich soil to which is added lime rock and sand for quick drainage. The winters here are very wet and cold so I have to cover the entire bed. Have mostly *Echinocereus*, *Thelocactus*, and *Hamatocactus* in this bed outside and they will not stand wet feet in the winter. They will stand the cold if they are dry. I had so many beautiful flowers on them this summer that I can say they really enjoy the care I give them."

*Ed. Note: Be sure they are completely dry before they are covered for the winter or they will continue to try to grow and be damaged.*

## PLANT QUARANTINE AT HOME

Sometimes I find a rare plant or one that I want very much as I prowl little greenhouses in the small towns as I pass through (and I never pass one up). But quite often it is infected with scale or has mealy bugs on it or its roots. Then the question is: do I want it bad enough to risk infecting my other plants? I nearly always yield to temptation. Sure I buy them, bugs and all. But I now have a system that works on that kind of plant.

I put them in quarantine—I simply isolate them completely from all my other plants by putting them in another room or out of doors in a separate place and go after them with sprays and powders. I repot them after I have cleaned the roots and base of the plant with soap and water applied with an old tooth brush. Or, if the plant is large, I turn the hose on it full blast and really clean it. Then I wash it with soap and water.

After a long time—when I am sure the plant is clean and I'm sure all the baby bugs are dead and are not going to hatch out and go visiting, I bring the plant in with the others and let it take its place among the favorites.

DR. G. L. BERRY

908 Arlington St., Lawton, Okla.

Correspondence invited

## A New Species Related to *Sedum Chloropetalum*

By ROBERT T. CLAUSEN

In May, 1948, Mr. T. MacDougall sent me several living Crassulaceae for study. These were plants from southern Mexico. Among them was a specimen which much resembled *Sedum luteoviride* in vegetative condition as a cutting. When flowers appeared, however, they were more like those of *S. chloropetalum* or

superficially similar to those of *Villadia*. Also, further study revealed that the plant differed significantly from both *S. luteoviride* and *S. chloropetalum*. A comparison of certain characteristics of Mr. MacDougall's plant with those of the other two species is available in the following table.

	<i>Sedum</i> from T. MacDougall	<i>Sedum</i> <i>luteoviride</i>	<i>Sedum</i> <i>chloropetalum</i>
vesture of stems	smooth	smooth	finely papillose
color of stems	brown to fuscous	green, sometimes pinkish or brownish	gray
bases of leaves	not spurred	short-spurred	short-spurred
apices of leaves	minutely papillose	smooth	very minutely papillose
length of sepals in mm.	7.6-9.6	4-6	5-6
orientation of petals	erect below, spreading above middle	rotately spreading	rotately spreading
color of petals	greenish yellow	yellow	green, pink at base
color of filaments	greenish yellow	yellow	crimson
color of anthers	yellow	yellow	red
length of nectaries in mm.	0.4	0.5-0.6	0.4
orientation of pistils	erect	divergent	erect
placentas	median on ventral walls of ovaries	elongate on ventral walls of ovaries	median on ventral walls of ovaries

In view of the above differences, I believe that Mr. MacDougall's *Sedum* constitutes yet another undescribed species of the subgenus *Pachysedum*. It comes from the same region as *S. chloropetalum*, namely Santo Tomas Teipan in the District of San Carlos, Yauatepec, Oaxaca. The habitat is described as rocky places at an altitude of about 2135 meters. Examination of pollen grains reveals that these are about 98% filled out and apparently good. This is compatible with the belief that this *Sedum* is sexually fertile. The name selected for it draws attention to the very long sepals which equal or exceed the petals.

*Sedum grandisepalum*, sp. nov., subgenus *Pachysedum*, sectionis *Fruticisedum*. Suffrutices erecti, ad 1.5 dm., caulibus glabris, ramosis, fuscis vel carychrois infra, pallide viridibus supra; folia alterna, sessilia, non calcarata, elliptico-oblonga, obtusa ad subacuta, plano-convexa, 10.2-17 mm. longa, 3.4-4.4 mm. lata, 1.2-2.2 mm. crassa; cymae terminales densae, 2-3 cm. in diam., floribus 3-7; bractae florales elliptico-oblongae, 9-13 mm. longae, 2.6-4 mm. latae; flores 5-partiti, 9-12 mm. in diam., sessiles; sepal

oblonga, erecta infra, patentia supra, obtusa ad subacuta, subtiliter papillosa, pallide viridia, 7.6-9.6 mm. longa, 1.6-2.4 mm. lata; petala lanceolato-oblonga, erecta infra, patentia supra, acuta, galbana; stamina filamentis galbanis et antheris luteis, 2.8-5 mm. longa, epipetala adnata 1.8 mm. supra basibus petalorum; squamae nectariferae subreniformes, luteae, 0.4 mm. longae, 0.8-0.9 mm. latae; pistilla erecta, galbana, 3.8 mm. longa, conjugata ad bases. Species floret in Decembri. Typus est planta culta ad Ithaca, N. Y., 1948, Decembri 8, R. T. Clausen n. C. 48-35 in herbario, Cornell University, originaliter ab saxosis, Santo Tomás Teipan, Distrito de San Carlos, Yauatepec, Oaxaca, Mexico, alt. 2135 m., circa 16° 20' Bor., 95° 35' Occ., T. MacDougall, B102.

The outstanding features of *S. grandisepalum* are the long sepals which equal or exceed the petals; the greenish yellow petals; the short placentas, as in *S. chloropetalum*, with the ovules borne in a dense cluster in the median portion of the ventral wall of each ovary; and the sessile leaves which are not spurred. The species most nearly related to *S. grandisepalum* seems to be *S. chloropetalum*, but the possibility exists that other species, still undescribed, from

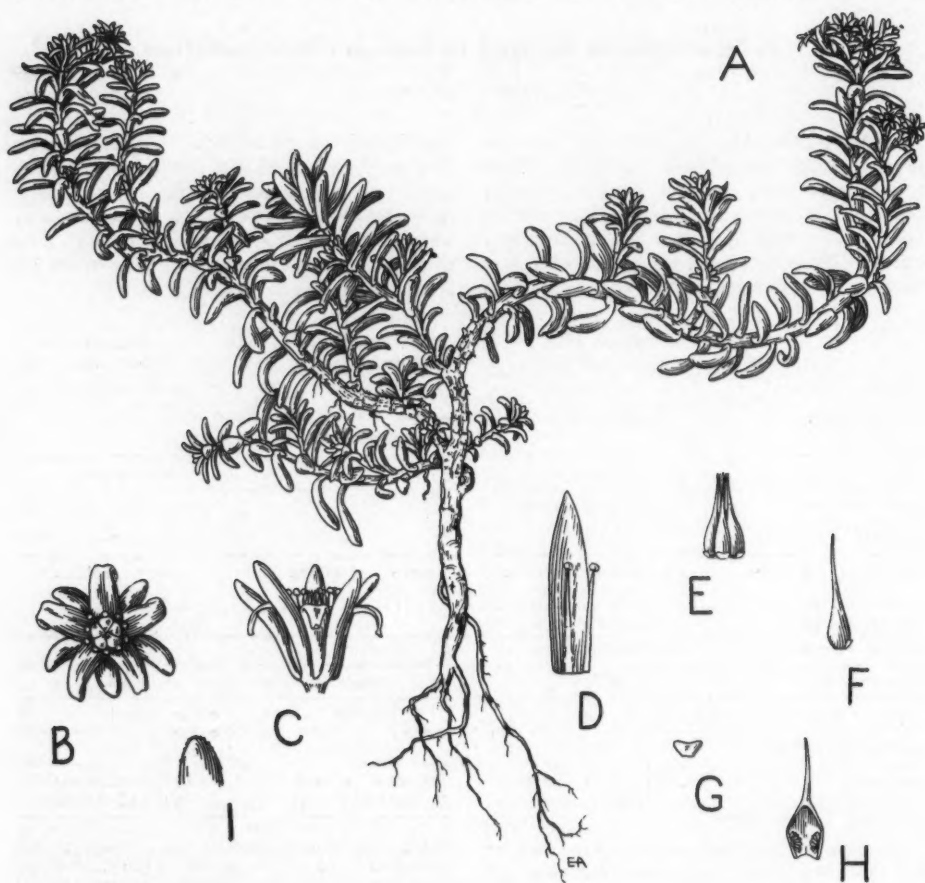


FIG. 96

- A. Habit sketch (x 0.5).  
 B. Flower from above (x2).  
 C. Flower from side (x2).  
 D. Petal and two stamens (x3).  
 E. Pistils (x3).

- F. Single pistil (x4).  
 G. Nectary (x5).  
 H. Carpel spread open to show placentation (x4).  
 I. Tip of leaf (x2).  
 Drawings by Miss E. M. Abbe.

adjacent regions, may be even closer relatives. The question of how *S. grandisepalum* came into being and came to inhabit the same region as *S. chloropetalum* is an interesting evolutionary problem.

Readers may doubt the advisability of describing new species on a basis of single collections. On the other hand, the training and experience of a taxonomist, particularly one who specializes on a genus or group of genera, should fit him for appraising plants in the field of his specialty. He should be able to decide whether each new specimen belongs to a species already described or whether it is sufficiently different

to deserve description as a separate species. Years of study are necessary before one can gain competence in a large genus and even then, the chances for error are great. In *Sedum*, for example, more than 1100 binomials have already been proposed. Such a large number of available names makes very real the danger of duplication. Another complicating circumstance in appraising the taxonomic status of tentative new species is the possibility that they may be interspecific hybrids. Information about the percentage of good pollen and ovules, cytological data and observational data from the field all may yield valuable evidence in this

connection, but sometimes opportunity is not available to obtain all this information. Since the process of investigating each species is a long task, taxonomists tend to reach tentative decisions concerning classification and then to revise as new data may require. In *Sedum*, this policy has been eminently practical, for many of the most familiar species in cultivation are still unknown cytologically and have not yet been studied in detail in the field, but are either known only from the type locality or are not definitely known from any locality in the wild. These include *S. amecamecanum*, *S. confusum*, *S. mexicanum* and *S. Treleasei*. Had taxonomists not described and named them, nurserymen would be unable to list any of these and botanists would have no definite means of referring to them. As practice exists, however, adjustments in nomenclature can be and are made as further data require. The practical need of a name by which to distinguish *S. grandisepalum* from other described species justifies the present description and assignment of a binomial, even though the species does not possess features of horticultural merit. Its interest to botanists and evolutionists is likely to be greater than its appeal to horticulturists. Those who are enthusiasts about *Sedum* will want it, however, and they will find that high temperatures and considerable moisture favor its growth.

In the preparation of this article, I am grateful to Mr. MacDougall for giving me the cuttings of *S. grandisepalum* and other species, to Miss Elsie Shemin for bringing them to me at Ithaca, to Miss Elfriede Abbe for the drawings showing the habit and details of structure, and finally to Mr. E. J. Alexander who has collaborated in making available various of Mr. MacDougall's collections which he might have described himself. In the case of *Sedum grandisepalum*, since the plant at Ithaca flowered three weeks ahead of the one at the New York Botanical Garden, Mr. Alexander graciously consented that I should describe it.

Department of Botany  
Cornell University  
Ithaca, New York.

#### FROM FRITZ SCHWARZ, MEXICO

Quite some time ago I came back from my Oaxaca trip. I was able to make the trip with my small truck as there is a paved highway to Oaxaca City and from there to Tehuantepec. I had made this trip sometime ago when there were no such highway, by burros, and with my friend Herman Marks from Salinas, California. At that time we passed through during the

rainy season and often we had to wait by the river until the water slowed down. This time I passed all the rivers without even getting my feet wet, and most of certain vegetation was dead or dying as it has not rained since October last year, and some plants which we collected on the first trip could not be found now on account of the dry season. Still I was successful, I found quite a number of very nice unknown species, as for instance a plant which you can see on the enclosed picture. Also the *Phylloc.* which grows on high rocks and trees, in the high sierra between the oak-woods. There also I was able to find a new *Mam.* which has been described in the meantime by C. Backeberg as *Mam. lanata* var. *depressa*, a very beautiful plant.

High up in the mountains I collected some *Aporoc. Gonzattii*, and when I went to the lower back country, I was able to find close to dry river beds, *Penioc. Macdougallii*. Farther on again I was lucky enough to find a new *Mam.* which C. Backeberg described as *Mam. rocksblana*, which grows together with the *Mam. nejapensis* on high, steep and very dry mountains. When we came down from there towards Tehuantepec, I collected some *Nictoc. oaxacensis*, *Pereskia Gonzattii* and *Meloc. oaxacensis*. Close to Salina Cruz I was able to collect some *Piloc. Collinsii* and *Mam. Collinsii*. Coming back out of this hot climate around Tehuantepec, I enjoyed nice fresh air again, even if it was very dry in Mitla, and soon I



FIG. 97

An unknown cactus photographed by Fritz Schwarz.

had courage enough to start looking in this country for something new. There is for instance, the *Mam. pseudosupertexta* which also C. Backeberg has described in the meantime. All these new plants will be published in the near future and a few more.

May 31, 1949





FIG. 98. The administration building and auditorium of the Desert Botanical Garden—  
W. Taylor Marshall, Director.

### THIRD BIENNIAL CONVENTION

#### *President's Report*

By ROBERT T. CRAIG

The enthusiasm and interest in the Third Biennial Convention of the Society was amply exemplified by the attendance of over 130 cactophiles at the Botanical Garden in Papago Park near Phoenix, Arizona, on July 2-5th. Representatives from nineteen states across the nation demonstrated the wide-spread interest in these exotic plants as the members from Massachusetts to California and from North Dakota to Texas vied with each other in their plant discussions. It is not just a passing fancy but it is a display of deep interest in succulent plants that will bring so many people thousands of miles across the country to meet with their fellow cactophiles in the desert country in mid-summer to discuss and learn more about their plants and also to see the plants growing in their native habitat.

The Society is indebted to John Haag for the identification badges and to G. C. Slaughter of Texas, who sent a *Lophophora Williamsii* to each one who attended the convention.

There was some discussion about the weather but despite the slightly elevated summer temperature, there were no casualties except the many "cokes" that the delegates managed to "kill" in an effort to satisfy old man thirst.

The opening session on Saturday afternoon was called to order by the convention chairman, Howard Gates, who introduced Mr. Reg Manning, the Chairman of the Board of the Arizona Cacti and Native Floral Society and well known cartoonist. Mr. Man-

ning in a short address of welcome, stressed that it was a pleasure to meet people who knew a cactus from an ocotillo but said that he felt that he could better express the welcome in his more familiar way with a drawing. With a few clever touches he converted a sketch of a saguaro into a laughing cactus saying welcome from the people of Arizona to the Cactus and Succulent Convention.

After a response to the address of welcome in which he expressed the appreciation of the national society to the Arizona society for the invitation and opportunity to hold this convention in the Botanical Garden, the president, Dr. Robert T. Craig, opened the business session with the introduction of the various officers of the society. The introduction of all of the members present was made in groups interspersed through the business session. In his report on the activities of the society the president enumerated the various public showings of pictures of flowering plants and of lectures by the various members. He enlarged to some extent on the work of the Research Committee in which was outlined the great amount of work that was being done by this group in translating new as well as old foreign literature and correlating it and other data into our general accumulation of information on cacti and succulents. This is very largely of a strictly scientific nature and although it may not be of interest to the average collector, it is part of the society's effort to keep its members informed as to what is transpiring in other parts of the world in relation to our exotic plants.



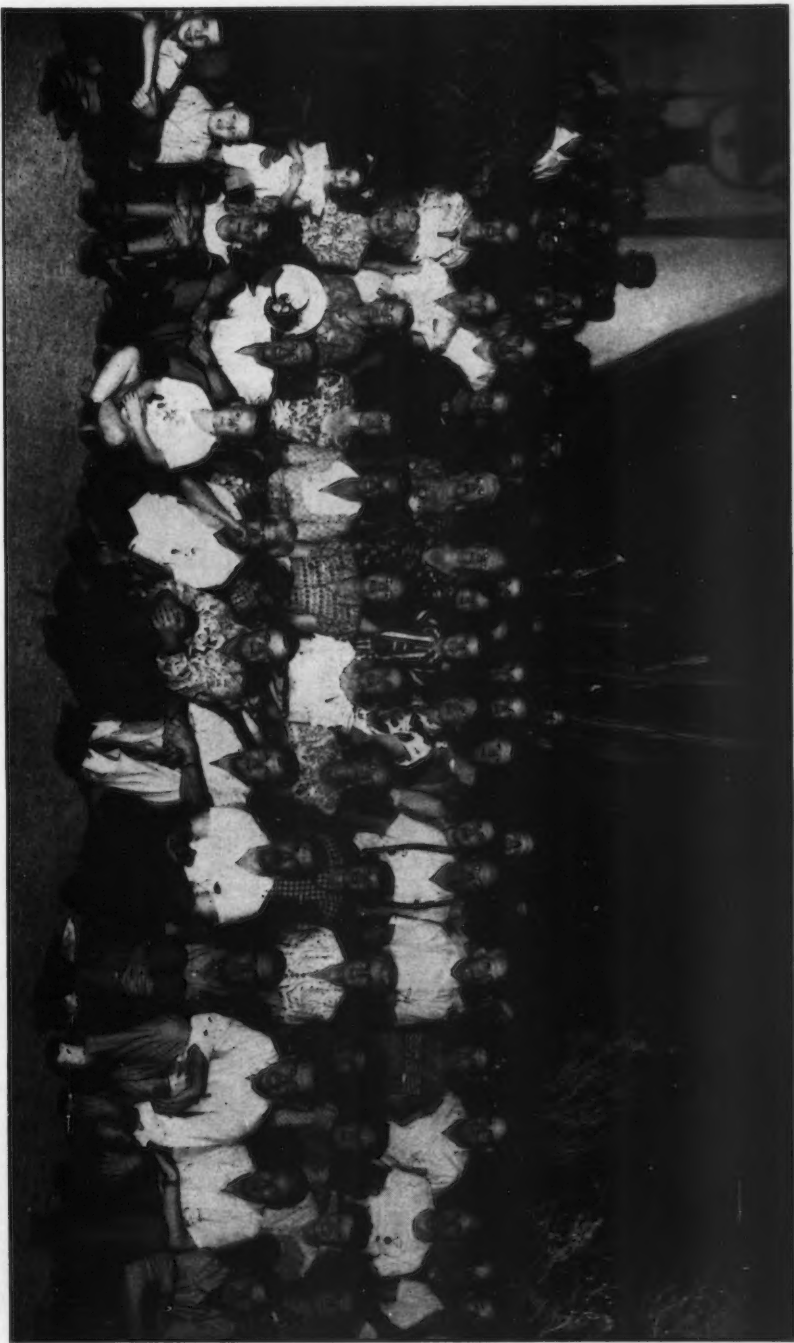


Fig. 99. Total registrations 130, of which 59 of these were Society members. The following states were represented: California 34, Arizona 32, Ohio 11, Colorado 8, Missouri 7, Texas 6, Illinois 5, Virginia 5, Massachusetts 4, Kansas 3, Louisiana 3, Michigan 2, Minnesota 2, New York 2, Pennsylvania 2, Indiana 1, North Dakota 1, New Mexico 1, Oklahoma 1.

Regarding the JOURNAL, it was pointed out that our magazine in its twenty years of publication has been the principal contact that most of the members have had with the society. There are only two other cactus magazines that have had a longer life. They are the German *Kakteenkunde*, which has now ceased publication and the Holland *Succulentia* which is still in operation. The policy of the Editor has been a difficult one to fulfill because of the combination of popular and scientific material all under one cover so as to hold the interest of all of the various readers.

Other activities of the society were enumerated and these included the work of Mrs. Florence Cariss as librarian and Dr. G. L. Berry in his momentous task of compiling a directory of the cactus collections of the country that may be visited by travelers.

In order to relieve the convention of much of the arguing over minor details associated with the various problems of the society, the president appointed specific committees to take these matters under consideration with instructions to hold their deliberations and to report back to the convention later in the program. This was in no way intended to curtail the discussion of these problems as all of these committee meetings were open to all delegates. It was believed that a smaller group could better thrash out these details and report their conclusions and recommendations for the benefit of all members in the general session and by so doing save much valuable time for other matters.

The committees appointed were: (1) Resolutions Committee with Dr. G. L. Berry as chairman (Mrs. Florence Cariss, Gilbert Tegelberg, Edward Taylor, Harold Ranshaw), (2) Committee on Affiliates with Carl Brassfield as chairman (Mrs. Ella Nipper, Miss Muriel Colburn, Homer Rush, Lad Cutak, Scott E. Haselton, Mr. Rayden), (3) Convention Committee with Howard Gates as chairman (Dr. Otto LaPorte, John Haag, Sherman Beahm, Wm. T. Marshall), (4) Regional Vice Presidents with Anthony Barone as chairman (Harry Johnson, Sr., Charles Cole), (5) Journal Committee with George Lindsay as chairman (John Rodgers, Scott Haselton).

Following the business session the president introduced George Lindsay who related the events in the development of the Desert Botanical Garden. As its first director, Mr. Lindsay was largely responsible for the extensive collection and arrangement of the great number of native plants throughout the garden. The assemblage upon adjournment was invited to inspect the garden.

In order to make it more convenient for the delegates to obtain the necessary food requirements, arrangements were made for the meals to be served at the garden. This not only greatly relieved the transportation problem but it also held the group together and made it possible to keep very closely to the time schedule as well as to make for great enjoyment of the fellowship around the dining table.



FIG. 100. Howard E. Gates, Chairman of the Convention, relaxing in his cactus collection from Baja California.

The round table discussions on the various phases of culture, pest control, color photography, etc., were well attended, even to the extent that when their time was up, it was difficult to break them up in order to convene the general sessions. There was much comment by the delegates that there should be more of this type of program at the conventions because it gave them an opportunity to discuss their individual questions with a group all of whom were interested in the same problem.

Mr. Robert Peebles of the U. S. Field Station at Sacaton, Arizona, conducted a very informative discussion on the preparation of cactus and succulent plants for herbarium preservation. He had on display many sheets of the dried specimens of the native Arizona cacti. Although this is not one of the activities of the average collector, it is a very important aspect of the scientific approach to the proper identification of plants, in that the true specimens of a given species are preserved for comparison and for future study.

Sunday evening a short but very impressive pause in the convention was called for the "In Memorium" for three of the members who have distinguished themselves in their fields of endeavor but have since journeyed across the Great Divide: Gustave Stark, Mrs. Gertrude Webster, and Irving Cole.

In concluding the Sunday evening program, the Proctors of Kodachrome fame, favored the convention with the showing of their colored slides of the various cacti in flower. Their appreciation for the minute details and their exacting reproduction of the finest of the fine points has carried their work far and wide.

The final day of the convention proper was filled to overflowing with activities, some serious but many frivolous. In order to entice the conventioners to dig the sleep out of their eyes, a door prize was offered to those attending the 9 o'clock session (what an outrageous hour to convene when few of them got to bed before the wee small hours that very morning). To the surprise of the convention committee most of the delegates were on hand for the drawing. Mr. Ranshaw held the lucky number and was presented with a copy of the *Mammillaria Handbook* by the president. Following this was another group of well attended round table discussions.

One of the highlights of the convention was the election of the King and Queen of the Cactus Nuts. The two contestants for the honor of being King were Gilbert Tegelberg and Gerald Barad. For the similar honor of being Queen of the Nuts also drew two contestants in Florence Cariss and Bee Barad. After much demonstration, the election by public acclaim ordained that Gerald and Bee Barad should reign as King and Queen and would be duly crowned as such at the afternoon fun session. (The Barads are a young couple from New York—Lanky Gerald and petite Bee.)

The convention finally calmed down enough for our Board of Directors member Harry Johnson, Sr., to relate his experiences on a collecting trip through the South American countries of Peru, Ecuador, Colombia and also Mexico. His report opened our eyes to the fact that there are still very fertile fields for the exploration for new plants and varied experiences in these countries.

The final business session brought out the fireworks as the committees presented their reports and the floor was thrown open for unlimited discussion.

For the Journal Committee, Mr. Lindsay highly

commended the type of magazine that was being published and suggested the following recommendations:

- 1 More popular material requested.
- 2 Dr. Berry to conduct a column on culture.
- 3 Rodgers' column to continue.
- 4 Cutak's column to continue.
- 5 Johnson's column to continue.
- 6 Description of new plants to continue.
- 7 Issue every two months as per now.
8. Report on convention in September-October issue
- 9 One-third of first years dues of a new member that has been written by a member of the society to go to the society treasury.

For the Regional Vice Presidents Committee, Mr. Barone recommended that the Vice Presidents be given a territory that they could handle and to have their specific duties outlined. If this did not work out, the office should be abandoned. It was suggested by the president that the Vice Presidents should not be appointed but that they should be elected by the members in specified districts. Report was referred to the Board of Directors for further study.

For the Resolutions Committee Dr. Berry presented two resolutions. (1) Be it resolved, that Mr. Scott Haselton be highly commended for his untiring and unselfish services in preparation and publication of our official organ, namely *The Cactus and Succulent Journal of the Cactus and Succulent Society of America*. The committee requested that this resolu-



FIG. 101. Cactus Pete, Ladislaus Cutak, W. H. Earl, and J. A. Schroeder clowning in the Supersittitions.



FIG. 102. Gerald and Beatrice Barad, from New York, were crowned King and Queen. Cutak photo.

tion be published in the September-October edition of the JOURNAL. (2) Be it resolved, that a Board of Directors consisting of eleven members be elected annually. One from each region, each to represent his own region and the Society as a whole. These regions to be outlined geographically by a committee appointed for that purpose. This Board shall be the governing body of the Society and shall elect within itself a President, Vice President and a Secretary-Treasurer. The President shall act as chairman of the Board with all the powers outlined in the constitution and by-laws. Within this Board of Directors there shall be elected by the members of the Board an executive committee consisting of the President, the Secretary-Treasurer and three other directors all residing within the western regions, whose functions shall be to take such action as is needed during the interim between board meetings and whose actions shall meet with the approval of the Board of Directors. The procedure of the election shall be as follows, that the roster of membership shall be mailed to

each member of the society, divided into regions for the purpose of voting. Each member shall vote for a member in his region and the members receiving the largest number of votes shall be declared elected. Mr. Brassfield pointed out that in order to comply with the California law under which the society is incorporated, it is necessary that two-thirds of the Board of Directors reside within the state. After considerable discussion the matter was referred to the Board of Directors for further study to find a plan by which the various sections of the country would be given representation in the affairs of the society.

For the Affiliate Committee Mr. Brassfield presented the following resolution: Be it resolved that each affiliate be required to maintain a sustaining membership in the Society. Said membership to be of two amounts, affiliates with membership of less than 50 members to take a sustaining membership of \$5.00 per year; affiliates with a membership of 50 or more shall maintain a sustaining membership of not less than \$10.00 per year. Each affiliate shall appoint or elect a capable person to act as correspondent, to send in monthly reports of plant talks held in meetings, field trips, gardens visited and plants seen. These reports to be printed in the JOURNAL in the affiliate column. Said correspondent to omit all reference to things to eat or other points not connected with plants.

For the Convention Committee Mr. Gates reported that there were two bids for the next convention, namely: El Paso, Texas, and Zimapan, Mexico. It was also requested that a registration fee be charged for a family with one member having a vote. After much discussion about the two proposed places the Denver delegation (8 members present out of a membership of 16) put in their bid for the next meeting. This was accepted and the date was set as of July, 1951.

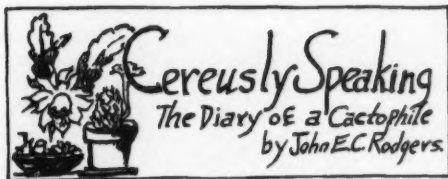
Officers for the next convention were elected as follows: Howard Gates, chairman; Lad Cutak, vice chairman; Miss Muriel Colburn, secretary. This concluded the business session of the convention.

The fun session, under the direction of Lad Cutak, proceeded with the crowning of the King and Queen of the Cactus Nuts. Their crowns were clever arrangements of hollowed out specimens of barrel cactus and the King's scepter was a flowering stalk of an Agave. Every one joined in the fun of the initiation into the "Ancient Order of the Cactus Nuts" and were thereupon awarded a decorative certificate.

Monday evening was the concluding session of the convention and at that time they were favored with motion pictures taken by George Lindsay while on his travels in Sonora and Lower California, Mexico. Just before he showed his pictures, he was awarded a Fellowship in the Cactus and Succulent Society of America for his contribution to the knowledge of the xerophytic plants that he has gained in his many exploration trips into Mexico. After the showing of the pictures the delegates adjourned to the Continental Auto Court where all partook of a watermelon feed as the guest of Dr. and Mrs. Craig.

The post convention field trips, which were taken by quite a number of conventioners, presented an excellent opportunity for them to view the many plants as they grew in their native habitat, and also in their very natural setting at the Boyce Thompson Arboretum where Mr. Gibson has arranged such an outstanding collection. The beautiful sunset and entrancing moonlight night were enjoyed by all as a fitting climax of a very enjoyable and successful convention.





Some of the largest succulent plants known are found among the Aloes, but this genus is best known for its greenhouse subjects which are found in most collections. The Aloes I own are classified in "Succulents for the Amateur" pages 144-155 as "soft-leaved, stemless, and procumbent" species. These all have rosettes of leaves which are easily broken if exposed to too much traffic. The leaves are warted, spotted, and banded in various colors which make the Aloes exceedingly decorative for the "decorated-pot fancier."

There are at least 200 Aloes known and classified. Of these 60 to 80 species (as well as many varieties) are or have been available to collectors during the time I have been collecting. However, some were so much the same in appearance that I did not always buy. I now have 40 species in cultivation.

Popular names have been slow to be given to the Aloes in these parts—no doubt because of the space needed to keep these plants has limited the number grown. *Aloe variegata* and variety *ausana* are known as Partridge Breast and are sold by this name in most gift shops. Full grown specimens of the large *Aloe arborescens*, although seldom seen except in glass houses of public parks, is called the Tree Aloe. It gets bark like a tree. The others are sold as "Cactus!" Most of the succulent plants sold here are so labeled, which makes it difficult for the public to know which is a cactus and which is a succulent.

My Aloes bloom during the late winter and on through the spring. Hot weather seems to stop them. There are a few that bloom year after year and others that flower only if there is plenty of sunshine in late winter. *A. variegata* and var. *ausana*, *A. longistyla*, *A. minima*, *A. ciliaris*, *A. brevifolia*, *A. arborescens*, *A. spinosissima*, and *A. microstigma* are the dependables. *A. aristata*, *A. eru*, and *A. saponaria* bloom if I am able to keep them growing. All Aloes are gross feeders and any good fertilizer such as liquid manure, Vigoro, etc., are suitable.

The diseases are so mild that most collectors never seem to recognize them. I've found loss of roots is due to poor drainage and "cold positions" in the greenhouse. Mealy bugs often become a pest in the "wrap-around leaves" on the stalks. Frequent forcing the leaves from the stems while using water to wash away "meale" and "honey-dew" with the force spraying of "Black-leaf 40," "Red Devil" and "Garden Volck," usually controls this pest. However, frequent washing, clean soils and plants, prevent this mutilation. I prefer non-oil base spray because the "bloom" on the leaves is not destroyed. Dead leaf tips and spots look like they had been compressed by the thumb are no doubt caused by lean soils; these spots disappear when I give them richer soil or liquid manure waterings. Dead leaf tips are found on *A. aristata*, *A. vera* and its hybrids, and *A. arborescens*; more water during the resting period also helps to control this disfigurement. "Compressed tissue spots" are also found in other members of the succulents of the Lily Family.

The Aloes are all native to the South African velds

which makes them similar to our "children-of-the-sun," the cacti. The soil in Africa where Aloes grow is rich loam with plenty of humus, clay, and gravelly sand—these soils produce low, coarse grasses and bushes which furnish some shade for small plants and as a ground cover for root protection. Some of the larger species grow among rocks and on rocky hill-sides where the sun is hot on their heads and cool root conditions, so needed by our garden lilies.

From the above, one cannot go far wrong if he keeps his plants growing in good well-drained loam with a liberal mixture of pulverized clay which contains needed food material. The western growers use weathered granite in their soils for all succulents.

The Aloe flowers are tubular and vary according to the species from yellow to red and shades between, such as brown, red, golden yellow, and canary markings. The African spring corresponds to our fall but my plants are nursery grown which helps them to adjust to our climate.

There is not one Aloe that I own that is not adaptable to window gardening, but there are several that would need a bay window where traffic passed by and not around. These are *A. arborescens*, *ferox*, *pretoriensis*, *spinosissima*, and *vera*. Most of these grow to be 3-5 feet, gangly, stemmed rosette-topped sticks which do bloom if light is excellent. During our winter days in this section, our houses are too dark to expect flowers.

The flowers of any and all species are attractive. They last from five to twelve days when given the cooler spots. A succession of flowers open as the stalk matures. The better they are grown, the longer the flower stalk and the longer flowers will last. My choice for a small compact free-blooming collection of Aloe plants are *Aloes longistyla*, *minima*, *variegata*, and *ausana*.

The plant of the month is *Aloe variegata*, the Partridge Breast Aloe of commerce. Its stiff, pointed leaves are gouged out so that one leaf develops and fits into the V of the older ones which are spiralled around the succulent stem. Its nick-name aptly describes the striping of the leaves, (*ausana* is more spotted). The hard edges are slightly toothed and translucent for protection. The flowers are pinkish red to salmon with five greenish brown stripes running up from the edge of the six-petalled tubular flower to the stem. If left on the dry side, the lower leaves assume an orangy shade which always attracts attention from visitors. It is harmonious with the flower shades. My *Aloe variegata* and its variety *ausana* often loose their roots. It will go right on blooming until rooted, as they root readily enough. I even break out the top rosette when they get too leggy and re-root it. They may not be the easiest of the Aloes to grow but they are a universal favorite and run second only to the Christmas Cactus and Epiphyllum Ackermannii. Here's to your success with the Aloes they are succulents of distinction.

Next issue will be *Pereskia* and *Pereskiaopsis* with the Plant of the Month being *P. grandifolia*.

JOHN E. RODGERS

1229 Eight Street, Lorain, Ohio.

#### FROM AN OLD FRIEND

Will you kindly send information about your JOURNAL to a friend in Chile. I have not been in touch with the cactus clan for some time but I still have my collection and will always have a cactus garden.

HELEN MCCABE  
San Diego, Calif.





## QUESTIONS and ANSWERS

Conducted by  
**HARRY JOHNSON**  
Paramount, Calif.

**Question:** I have been collecting cacti for the past 7 years but am not having the results I think I should. I use 1 part leafmold, 1 part loam, 1 part sand but my plants lose their roots. I have used sand culture but though the roots do not die they are stringy and do not seem to have much life in them. I have tried not much water and also plenty of water. Geo. Lechman, N. Y.

**Answer:** If you follow these instructions remembering that cacti are desert plants and are, from the nature of their environment, slow growers you should have good results. Give plants plenty of fresh air as this is very important. Don't coddle plants. They are plenty tough if afforded a good circulation of air and lots of sunlight. Double the amount of sand in your mixture. The sandier the soil the less trouble you will have with roots rotting. Cactus roots need air. A tight or clayey soil excludes air as does a wet soil. Use a western or schlerophyllus leafmold which is quite different than eastern leafmold from deciduous trees. It may be procured from dealers. Give your plants as much direct sunlight as possible. Put them outdoors, protected from heavy rains, if possible. Sun through a glass window loses the ultraviolet rays which are reflected. Heat rays pass through readily but the longer red rays do not have all the requirements necessary for complete photosynthesis for desert plants. Water lightly. Never saturate the soil. Water again when dry but don't dessicate your plants. I try to water just enough to have them on the dry side in about 5 days. It is better to water this way and have your plants thrifty. Heavy waterings cake the soil and completely change its physical characteristics particularly in the house or under glass. Don't expect results in a week! Plants may have been sadly weakened by loss of roots or lack of sunlight. Like a debilitated person it takes time to build them up.

**Question:** The Territory of Hawaii is considering introducing cactus pests to control the Opuntias which have run wild. What will they do to our garden in the long run? Mrs. Hector McD. Moir.

**Answer:** If they use Cochineal insects for control nothing much will happen except to such

Opuntias you may have in your garden. One or two species of Opuntia beetles might be used also, but experience has shown these insects are very selective in their tastes and do not harm other genera. They will die out when the Opuntias are gone.

**Question:** I have lost two split Rocks (*Pleiospilos Nelii*) and wonder what I have done wrong. Mrs. Oliver Keddle, Minn.

**Answer:** The *Pleiospilos* are impatient of too much water. Give them a quite sandy soil. Pot them in barely damp soil and place them in a sunny spot with plenty of ventilation. Don't water for a week then quite lightly for a month. They should be rooted by this time. Water only when dry and preferably in the morning so surplus moisture will be dried up by evening from around the base of the plant. They just don't like water when freshly planted. They are really about the easiest of all succulents to grow. In winter when days are dull keep them on the dry side. They flower in April or May. Practically all the other *Pleiospilos* flower in August and September.

**Question:** I have had trouble with some of my *Echeverias* this summer. They have been in a sunny place with ample water. Mr. Robert Noyes, Mass.

**Answer:** Probably the moist heat was at fault. Most of the *Echeverias* are from the higher mountain regions, 3,000 to 10,000 where night temperatures are usually considerably lower than day temperatures. Since the conditions under which the various species grow are quite varied no hard and fast rules are possible. The smooth white leaved species generally grow in exposed positions with not a great deal of rain though there may be dripping fogs sometimes for weeks or months. The hairy leaved species like *E. setosa* may have more rain and frequent less exposed situations. During July and August after blooming I keep the white leaved species on the dry side and in a sunny place. The leaves curl in and the plants go completely dormant. In September they open out again. The hairy leaved species seem to do better with a little broken shade in summer and with more water. I try to get some growth in September and October then taper off watering during winter. If they grow indoors in winter the growth is often etiolated and weak. Better let them rest till days are longer in spring. If you have a greenhouse with plenty of light and temperatures are in the fifties they will do well.

EDITOR'S NOTE: If you like this page, be sure to send your questions direct to Mr. Johnson.



# SPINE CHATS

LADISLAUS CUTAK



The third biennial cactus convention is now history but all who attended the meeting at the Desert Botanical Garden in Papago Park will not forget it for a long time. Howard Gates, convention chairman, spent countless hours preparing the program and to him must be given credit for the smoothness with which it was run.

A more congenial crowd could not be found anywhere, except, of course, among cactus enthusiasts. Some 130 registrants appeared to have the time of their lives. They came from various parts of the country and from all walks of life, but they were all brothers and sisters under the skin. Cactus nuts—yes! but the swellest folks you ever want to meet.

The organization meeting started off with an address of welcome by Reg Manning, famous cartoonist and chairman of the Board of the Arizona Cactus & Native Flora Society. He uniquely greeted us by drawing a human-enough Saguaro with the familiar "howdy" sign. Dr. Robert T. Craig, president of the national organization, responded to the address and presided over the business session, during which time committees were appointed. Next on program was Wm. Taylor Marshall, director of the Desert Botanical Garden, who conducted the group on a tour of the cactus garden. At the evening session Bill Marshall rendered a superb illustrated talk on Desert Wildflowers. It is always a treat to listen to Bill.

The Sunday afternoon session was presided over by yours truly and at this time various leaders in their respective fields were assigned for the round table discussions. The debates embraced all kinds of subjects from outdoor culture to pest control and from Epiphyllums to rocks and minerals. Another round table took place the following morning, under the supervision of Carl Brassfield, past president of the society. R. C. Proctor discussed color photography and easily this proved to be one of the highlights of the discussions. I'm sure the pointers Proctor had to offer proved very helpful to our photographers. In the evening we had the pleasure of viewing Proctor's excellent kodachromes for which he has become famous.

An innovation at the 1949 convention was the election and crowning of a cactus king and queen, initiation of members into the Ancient Order of Cactus Nuts, and the fun session. Chairman Gates placed me in charge of this program which was spontaneous and entirely unrehearsed. I take this opportunity to thank everyone for the splendid cooperation I received in putting this affair over; but particularly I want to thank all the participants in the front line and especially Mort Spielman of Chicago and Miss Muriel Colburn of Denver, the 'victims' of our initiation ceremonies. By qualifying for the honor, Mort Spielman was blindfolded and then ceremoniously dumped on a Barrel Cactus. My assistant, Cactus Pete of Los Angeles, and I saw to it that Morton was duly initiated for the menfolk. I have not been informed whether he needed the assistance of a doctor later on. After Mort came Miss Colburn. We singled her out from the audience and after much fussing and kicking half-carried her to the front, where she, too, was blindfolded and subjected to a spanking. The

spanking would not be hard to take normally but we tied a vicious Prickly Pear Cactus to the paddle. Aren't we devils? Unfortunately, Miss Colburn squirmed so much that a few of the long stickers managed to find their way into her anatomy and deftly I had to pull them out. Muriel has suggested that for the 1951 convention a spineless variety of *Opuntia* be used for the paddle boards.

The enthronement and crowning of the Cactus King and Queen was a novelty enjoyed by everyone present. The young couple chosen for the honor hailed from New York City and a more charming pair couldn't have been selected. Youthful Gerald and pretty Beatrice Barad made their entrance from the patio, preceded by Princess Pat Moorton of Palm Springs who was attired in a cute off-the-shoulder blouse and rolled up jeans decorated with applique Prickly Pears on her seat. She carried the royal Agave flowerstalk scepter and queen's bouquet of dried desert materials which she designed so cleverly. After courtesing at the throne, Princess Pat retired to the back while King Jerry and Queen Bea were hoisted to their ceremonial seats atop a long table. There they were crowned with the hollowed out apical portions of a California Barrel Cactus. The king, tall and slender, was attired in a dark sport ensembles in contrast to his pint-sized queen, stunning in white shorts and blouse. After the ceremony, the reigning king and queen were busily autographing the members' certificates of initiation which were presented to all those present. During the fun session a number of cameras were clicking. If your pictures turned out good would you mind sending me duplicates or loan me the negatives? I'd like to have a record of the proceedings. Write me, please.

A short biographical sketch of our Cactus King and Queen is in order here. As a youth, Gerald Barad became interested in gardening while attending children's classes at the Brooklyn Botanic Gardens. He did undergraduate work at Cornell University and hoped to get into Plant Pathology but had a change of heart and went into a pre-medical curriculum. In 1943 he entered service and remained three years with the Army Medical Department, serving one year overseas in India. After his release he went back to college and at present is attending the Medical School at Cornell. Beatrice Barad matriculated at Hunter College, majoring in Biology, and received her Bachelor's Degree in 1945. She is now working as an analytical research chemist in the Department of Obstetrics and Gynecology of the New York Hospital. Both Jerry and Bea are ardent followers of the outdoors. In fact, it was through a camping group that they met in 1938 which led to their marriage in 1946. While an apartment is hardly a place to grow a great collection of plants, the Barads are succeeding with cacti and succulents. They were intrigued by these fascinating plants at an uncle's home and this year's trip gained for them a real start for their collection for they brought home several specimens from the field. The Barads' other love is tropical fish but Queenie admits it is a poor second to their succulents. They have five tanks in all. Photography is another avocation they follow. Yes, folks, your king and queen are tops.

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## BOOK NOTES

## CURT KNEBEL'S NEW BOOK

By Werner Engelhardt, Edited by Gertrude W. Beahm

*Phyllocactus* is the name of his new book that describes his life-work in hybridizing Epiphyllums. Curt Knebel is our oldest propagator of these plants and it is his hybrids that first attracted hybridizers in this country. This life history includes: Laws of Nature of Propagation, My Methods as a Propagator, List of My Originations, Cultivation and Propagation of Phyllocacti, Care of Phyllocacti, etc. The booklet is in Mr. Knebel's own words without changes in his nomenclature. It is understandable, practical, and most valuable for every grower of Orchid Cacti. We are fortunate to have the lifetime experiences condensed into such a practical book. Published by Abbey Garden Press, Box 101, Pasadena, California. Price \$1.50 postpaid. Order now so that you may apply his methods during the growing season of these hybrids.

## A NEW BOOK FROM ENGLAND

*Succulent Plants Illustrated* is the title of the new book by the well-known Vera Higgins, author of *The Study of Cacti* and many translations. There are 72 pages 7x10 inches including 24 full pages of drawings by the author; 130 different plants are illustrated so that beginners can quickly identify their succulents. For one handy with water colors, these plants are perfectly reproduced for hand coloring. The object of the book is to give some idea of the variety to be found amongst succulent plants, and because it is not always easy to picture a plant from a written description, illustrations are the chief feature. The accompanying text tells briefly how plants are related to each other, where they grow and how they can be cultivated. Copies are available for immediate delivery at \$2.50 postpaid (\$2.60 in California). ABBEY GARDEN PRESS, Box 101, Pasadena, California.

Backeberg's *B. F. K. (Blatter für Kakteenforschung)*. This bulletin of cactus research was published between 1934 and 1938 and contains 460 pages and 250 photos. Each cactus is described in English. The most valuable material since Britton and Rose. Absolutely necessary for those studying classification. Unbound; spring binders available soon.....\$6.75, foreign \$7.25

ARIZONA HIGHWAYS MAGAZINE—Christmas issue 1947. Contains 27 beautiful cactus and desert plants in color. The two cover pictures 9x12 inches are worth \$5 as framed pictures of cacti. Postpaid 50c.

## ABBAY GARDEN PRESS

Box 101 — Pasadena 16 — California  
Please add Sales Tax on California sales

The September issue of *Woman's Day Magazine* carried a story "Desert Blossoms" illustrated in color by R. C. Proctor. This three million magazine is circulated through A. & P. Food Stores at 10c per copy. Copies are also available from the main office at 19 West 44 Street, New York 18, N. Y.

I surely enjoy each number of the JOURNAL—especially Harry Johnson's Question and Answer Column. I hope that readers will not forget to use this column and send in question to Mr. Johnson.

GRACE GILLILAND, Ore.

Will an artist or draftsman volunteer to do occasional small assignments for the JOURNAL? We still have a good sketch of a gas heating plant that has to be redrawn in India Ink.

